

Title (en)
Molded cooling fan

Title (de)
Geformter Kühllüfter

Title (fr)
Ventilateur de refroidissement moulé

Publication
EP 1719919 A2 20061108 (EN)

Application
EP 06076381 A 20011026

Priority
• EP 01309097 A 20011026
• US 71173500 A 20001113

Abstract (en)
A cooling fan (10) includes a plurality of blades (12) molded about a central hub plate (11) at an annular molded ring (13). In one feature, a plurality of helical gussets (30) are formed on inlet side (25) of the molded ring (13) at the blade root (15). The gussets (30) are spaced apart to define flow gaps (32) therebetween, and are curved to substantially follow the airflow path through those gaps (32). A like plurality of radial ribs (40) are formed at the outlet side (26) of the fan (10) between the inner diameter of the molded ring (13) and the trailing edge/blade root interface. The ribs (40) can include an indented stacking surface (41) that engages a contact surface (42) on the inlet side (25) of the fan (10) to facilitate stacking of multiple fans. In another aspect, the fan blades (10) are configured to include elliptical or parabolic camber lines (C) that vary along the radial length of the blade. The greatest curvature (R) of the camber lines occurs adjacent the trailing edge (19). The blade curvatures (C) are configured so that the blade stacking, or the centers of gravity (CG) of radial blade segments, achieve a predetermined alignment under normal operating loads that is calibrated to minimize bending moments between blade sections.

IPC 8 full level
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Citation (applicant)
• US 2346552 A 19440411 - BROTZ ROMAN C
• GB 2302141 A 19970108 - LG ELECTRONICS INC [KR]
• US 5863182 A 19990126 - HILL D LEE [US], et al
• US 1995193 A 19350319 - STILPHEN CHARLES A

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